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STATE OF WASHINGTON  
DEPARTMENT OF ECOLOGY

3100 Port of Benton Blvd • Richland, WA 99354 • (509) 372-7950

November 21, 2007

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**EDMC**

Mr. Allyn Boldt  
1019 South Irby Street  
Kennewick, Washington 99338

Re: Final Decision on the 2+2 Modification of the Waste Treatment and Immobilization Plant (WTP) Dangerous Waste Permit (DWP)

Dear Mr. Boldt:

The Department of Ecology reached a final permit decision to modify the WTP DWP in Part III, Chapter 10 of the Hanford Facility Resource Conservation and Recovery Act Permit, Dangerous Waste Portion for the Treatment, Storage, and Disposal of Dangerous Waste (WA7890008967).

The 2+2 modification incorporated the following changes into the WTP Permit:

- Deleted one melter from the Low Activity Waste (LAW) Facility design, but added Permit Condition III.10.I.1.a.xxiii., which requires the Permittees to retain the ability to install the third melter, if necessary.
- Added one melter to the High Level Waste (HLW) Facility design.
- Deleted the technetium ion exchange process system from the Pretreatment Facility (PTF) design.
- Added Permit Condition III.10.E.2.e. The Permittees are required to comply with the Land Disposal Restrictions (LDRs) for radioactive HLW. The LDRs specify a treatment technology of High Level Vitrify (HLVIT) for radioactive HLW generated during the reprocessing of fuel rods when it is mixed with dangerous waste metals. This permit condition requires any high level fraction of mixed waste (LAW feed, supplemental treatment waste feed, and/or secondary waste streams) exhibiting the characteristic of corrosivity (D002) and/or toxicity for metals (D004 – D011) to be treated using HLVIT.
- Added flooding volume calculations and sump data submitted in PTF design package PTF-065. This was the final submittal for Permittee compliance with Compliance Schedule Item 12 in Attachment 51, Appendix 1.0 of this Permit, "Submit Engineering Information for Each Secondary Containment and Leak Detection System for the WTP Permit System to be Included in the Permit."

This package included: *Flooding Volume for Room P-0150 in the Pretreatment Facility*, 24590-PTF-PER-M-04-0008, Revision 1; *Sump Data for Pretreatment Facility Room P-0150*, 24590-PTF-PER-M-04-0009, Revision 0; and the *IQRPE review of the Pretreatment Facility (PTF) Elevation (-) 2'-0" Secondary Containment of Radioactive Liquid Waste Disposal System (RLD) Tanks (RLD-TK-00006 A/B)*, Revision 0.

- Added detailed HLW melter design information submitted in permit design packages HLW-018 and HLW-019; *Miscellaneous Treatment Unit for the HLW Facility HMP System*, and *Miscellaneous Treatment Unit Sub-system Equipment for HLW Facility HMP System*, respectively; and added instruments to Permit Table III.10.J.C. These two Design Packages are the final packages scheduled for submittal under Compliance Schedule Items 28 and 29 in Attachment 51, Appendix 1 of the WTP Permit.
- Added Permit Condition III.10.C.15.a.i. This condition requires system descriptions for mechanical handling systems to be included in the Administrative Record and submittal of design information for cranes that lift and transport filled Immobilized HLW or Immobilized LAW canisters for incorporation into the permit.
- Removed the Radioactive Waste Handling System from the Critical System List in Appendix 2.0.
- Added Permit Condition III.10.E.2.d. This condition limits design, fabrication, and installation of WTP tanks containing Pulse Jet Mixers (PJMs). On June 28, 2006, Ecology issued a letter to United States Department of Energy-Office of River Protection (USDOE-ORP) and Bechtel National, Inc. (BNI) informing them that additional wear allowances are required for vessels with PJMs, or they would need to demonstrate the adequacy of the current design for erosion-corrosion. USDOE-ORP and BNI responded by requesting time to allow independent experts to review the method and data used to estimate erosion wear, a reassessment of tank waste particulate characteristics, and a determination if additional testing is required. Ecology approved the requested delay and added a permit condition to ensure tank fabrication and assembly does not preclude any modifications to wear plates inside the tanks.
- Added Permit Condition III.10.C.2.m. This condition requires USDOE to ensure all waste streams generated at the WTP and disposed of on site will not contribute to an exceedence of environmental standards.
- Denied the Part A Permit Application, Revision 2. In accordance with Washington Administrative Code (WAC) 173-303-803(3)(i), the Permittees must describe the processes to be used for treating, storing, and disposing of dangerous waste, and the design capacity of these items. In addition, WAC 173-303-282(2)(a)(iv) requires owners or operators proposing a significant expansion, defined as "a single or cumulative increase of greater than twenty-five percent of the process design capacity as described in the facility's original Part A permit application," to file a notice of intent with Ecology.

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The draft Part A Permit Application proposed the following changes in the WTP capacity:

- Increased the total treatment capacity of the WTP Facility by 35%.
- Increased the treatment capacity for vitrification by 7%.
- Reduced container storage capacity by 1,480,000 gallons.
- Increased tank storage capacity by 965,000 gallons.
- Added 170,000 gallons/day of containment building storage capacity.

The Permittees have not requested a WTP expansion under WAC 173-303-282, and Ecology does not believe it is the Permittees' intention to expand the WTP; therefore we are denying the Part A Permit Application until these capacity discrepancies can be resolved.

- Established an agreement between Ecology and the Permittees to eliminate the use of phantom in all Permit documents within one year of the effective date of this Permit.
- Incorporated several Class 1 and <sup>1</sup>1 modifications to existing portions of the permit.
- Made several editorial corrections and format changes.

During the public comment period (October 9, 2006, through January 5, 2007), comments were received from one Tribal Government, two governmental organizations, and three public citizens.

Comments are addressed in the enclosed Responsiveness Summary (Ecology Publication #07-05-006) as required by WAC 173-303-840(9). A DVD containing the Responsiveness Summary, Fact Sheet, and Part III Operating Unit 10 Permit, which includes the Permit Conditions, Chapters, and Appendices for the WTP DWP is included with this letter. The Responsiveness Summary and the WTP DWP are also available on the Ecology web site: [www.ecy.wa.gov/biblio/nwp.html](http://www.ecy.wa.gov/biblio/nwp.html).

The 2+2 modification of the WTP DWP was issued on October 29, 2007, and will become effective on December 7, 2007.

If there are any questions regarding this letter, or the WTP DWP, contact me at 509-372-7882.

Sincerely,

*E. A. Friedenberg (for Brenda Becker-Khaleel)*

Brenda Becker-Khaleel  
WTP Permit Writer  
Nuclear Waste Program

bbk:jc  
Enclosure

cc: See next page

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cc: ~~Administrative Record: WTP Permitting, HSWP~~ ✓  
Environmental Portal  
Hanford Operating Record General File  
USDOE-ORP Correspondence Control